The relationship between palm oil index development and mechanical properties in the ripening process of Tenera variety fresh fruit bunches.

ABSTRACT

This research has done to determine of the relationship between palm oil development in mesocarp and kernel and Mechanical properties of fresh fruit bunches during the ripening process. For this purpose, Tenera oil palm (Elaeis guineensis) variety (A cross between Dura and Pisifera) on 8 year- old palms planted in 2003 at the Malaysian Palm Oil Board (MPOB) research station were selected. Fresh fruit bunches were harvested and were divided into three regions (Top, Middle and Bottom) where the fruits from outer and inner layers of them were removed randomly during the ripening process between 8, 12, 16 and 20 weeks after anthesis. Fruit firmness test was done by using a Instron Universal Testing Machine to determine the mechanical responses of oil palm fruit under compressive loading of a cylindrical probe with a soft tip at 25ºC (Cylindrical probe diameter = 6 mm, tip thickness = 3.2 mm, and tip elasticity = 3.27 MPa). The soxhlet extraction tubes were used to the palm oil extraction.Calculation of earned data related to ripening time, oil content and mechanical properties has done by MSTAT-C and Microsoft Excel computer programs.

Keyword: Mechanical properties; Oil extraction; Oil palm FFB.